

NDA 20-607/S-005
G.D. Searle & Company
Attention: Mary Jo Pritza, MPH., Pharm.D.
Regulatory Affairs Associate
4901 Searle Parkway
Skokie, IL 60077

OCT 3 2000

Dear Dr. Pritza:

Please refer to your supplemental new drug application dated April 12, 2000, received April 13, 2000, submitted under section 505(b) of the Federal Food, Drug, and Cosmetic Act for Arthrotec® (declofenac sodium/misoprostol) Tablets.

This supplemental new drug application provides for revised text and the addition of statements regarding uterine perforation and uterine rupture to the boxed CONTRAINDICATIONS AND WARNINGS, and revised text to the "Geriatric Use" subsection of the PRECAUTIONS section of the package insert.

We have completed the review of this supplemental application, as amended, and have concluded that adequate information has been presented to demonstrate that the drug product is safe and effective for use as recommended in the submitted final printed labeling (package insert submitted April 12, 2000). Accordingly, the supplemental application is approved effective on October 03, 2000.

If a letter communicating important information about this drug product (i.e., a "Dear Health Care Practitioner" letter) is issued to physicians and others responsible for patient care, we request that you submit a copy of the letter to this NDA and a copy to the following address:

MED WATCH, HF-2
FDA
5600 Fishers Lane
Rockville, MD 20857

We remind you that you must comply with the requirements for an approved NDA set forth under 21 CFR 314.80 and 314.81.

SEARLE
Arthrotec®
(diclofenac sodium and misoprostol)
Tablets

CONTRAINDICATIONS AND WARNINGS
ARTHROTEC (diclofenac sodium/misoprostol) ADMINISTRATION BY ANY ROUTE IS CONTRAINDICATED, BECAUSE MISOPROSTOL COMPONENTS CAN CAUSE ABORTION, IN WOMEN WHO ARE PREGNANT (See WARNINGS and PRECAUTIONS).

• Anecdotal reports have been received, primarily from Brazil, of congenital anomalies and reports of fetal death in pregnancies in which diclofenac has been used as an abortifacient.

PATIENTS MUST BE ADVISED OF THE ABORTIFACIENT EFFECT AND WARNED NOT TO GIVE THE DRUG TO OTHERS.

UTERINE RUPTURE HAS BEEN REPORTED WHEN MISOPROSTOL WAS ADMINISTERED INTRAVAGINALLY IN PREGNANT WOMEN TO INDUCE LABOR OR TO INDUCE ABORTION BEYOND THE FIRST TRIMESTER OF PREGNANCY.

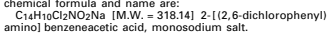
UTERINE PERFORATION HAS BEEN REPORTED FOLLOWING ADMINISTRATION OF COMBINED VAGINAL AND ORAL MISOPROSTOL IN PREGNANT WOMEN TO INDUCE LABOR OR TO INDUCE ABORTION IN EARLY CASES, THE GESTATIONAL AGE OF THE PREGNANCIES WAS UNKNOWN.

ARTHROTEC should not be used in women of childbearing potential unless the patient requires nonsteroidal anti-inflammatory drugs (NSAIDs) for the treatment of a developing gastric or duodenal ulceration or for developing complications from gastric or duodenal ulcers associated with chronic use of NSAIDs. In such cases, ARTHROTEC may be prescribed if the patient:

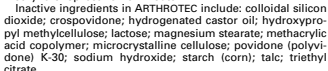
- has had a negative serum pregnancy test within 2 weeks prior to beginning therapy.
- is capable of complying with effective contraceptive measures.
- has received both oral and written warnings of the hazards of diclofenac, the risk of possible contraceptive failure, and the danger to other women of childbearing potential who may be exposed to the drug.
- will begin ARTHROTEC only on the second or third day of the next normal menstrual period.

DESCRIPTION
ARTHROTEC is a combination product containing diclofenac sodium, a nonsteroidal anti-inflammatory drug (NSAID) with analgesic, antipyretic, and anti-inflammatory properties, and misoprostol, a gastrointestinal mucosal protective prostaglandin E₁ analog. ARTHROTEC oral tablets are white to off-white, round, biconvex and approximately 11 mm in diameter. Each tablet consists of an enteric-coated core containing 50 mg (ARTHROTEC 50) or 75 mg (ARTHROTEC 75) diclofenac sodium surrounded by an outer material containing 200 mcg misoprostol.

Diclofenac sodium is a phenylacetic acid derivative that is a white to off-white, crystalline powder. Diclofenac sodium is freely soluble in methanol, soluble in ethanol and practically insoluble in chloroform and in dilute acid. Diclofenac sodium is sparingly soluble in water. Its chemical formula and name are:



Misoprostol is a water-soluble, viscous liquid that contains approximately equal amounts of two diastereomers. Its chemical formula and name are:



Inactive ingredients in ARTHROTEC include: colloidal silicon dioxide; croscopollose; hydrogenated castor oil; hydroxypropyl methylcellulose; lactose; magnesium stearate; methacrylic acid copolymer; microcrystalline cellulose; povidone (polyvinylpyrrolidone); sodium hydroxide; starch (corn); talc; triethyl citrate.

CLINICAL PHARMACOLOGY
Pharmacodynamics and pharmacokinetics of diclofenac sodium
Diclofenac sodium is a nonsteroidal anti-inflammatory drug (NSAID). In pharmacologic studies, diclofenac sodium has shown anti-inflammatory, analgesic and antipyretic properties. The mechanism of action of diclofenac sodium, like other NSAIDs, is not completely understood but may be related to prostaglandin synthase inhibition. Diclofenac sodium is completely absorbed from the GI tract after fasting, oral administration. The diclofenac sodium in ARTHROTEC is in a pharmaceutical formulation that undergoes dissolution in the pH of gastric fluid but allows a rapid release of drug in the higher pH environment of the duodenum. Only 50% of the absorbed dose is systemically available due to first pass metabolism. Peak plasma levels are achieved in 2 hours (range 1.5 to 2 hours) and the area under the plasma concentration curve (AUC) is dose proportional within the range of 25 mg to 150 mg. Peak plasma levels are less than dose proportional and are approximately 1.5 and 2.0 mcg/ml for 50 and 75 mg doses, respectively. Plasma concentrations of diclofenac sodium decline from peak levels in a biexponential fashion, with the terminal phase having a half-life of approximately 2 hours. Clearance

and volume of distribution are about 350 ml/min and 550 ml/kg, respectively. More than 90% of diclofenac sodium is reversibly bound to human plasma albumin.

Diclofenac sodium is eliminated through metabolism and subsequent urinary and biliary excretion of the glucuronide and the sulfate conjugates of the metabolites. Approximately 65% of the dose is excreted in the urine and 35% in the bile. Conjugates of unchanged diclofenac account for 5–10% of the dose excreted in the urine and for less than 5% excreted in the bile. Bile excretion of unchanged drug is not excreted. Conjugates of the principal metabolite account for 20–30% of the dose excreted in the urine and for 10–20% of the dose excreted in the bile.

Conjugates of three other metabolites together account for 10–20% of the dose excreted in the urine and for small amounts excreted in the bile. The elimination half-life values for these metabolites are shorter than those for the parent drug. Urinary excretion of an additional metabolite (half-life of 1.5 hours) accounts for 1–4% of the dose excreted. The degree of accumulation of diclofenac metabolites is unknown. Some of the metabolites may have activity.

Pharmacodynamics and pharmacokinetics of misoprostol
Misoprostol is a synthetic prostaglandin E₁ analog with gastric cytoprotective, mucosal protective, and antidiarrheal properties. NSAIDs inhibit prostaglandin synthesis. A deficiency of prostaglandins within the gastric and duodenal mucosa may lead to diminishing bicarbonate and mucus secretion and may contribute to the mucosal damage caused by NSAIDs.

Misoprostol counteracts bicarbonate and mucus production, but in humans this has been shown at doses 200 mcg and above that are also antiserotony. It is therefore not possible to tell whether the ability of misoprostol to prevent gastric and duodenal ulcers is the result of its antiserotony effect, its mucosal protective effect, or both.

In vitro studies on canine parietal cells using tritiated misoprostol acid as the ligand have led to the identification and characterization of specific prostaglandin receptors. Receptor binding is saturable, reversible, and stereospecific. The sites have a high affinity for misoprostol, for its acid metabolite, and for other E type prostaglandins, but not for F or I prostaglandins and other unrelated compounds, such as histamine or cimetidine. The evidence for misoprostol's effect relates well with an indirect index of antiserotony activity. It is likely that these specific receptors allow misoprostol taken with food to be effective topically, despite the lower serum concentrations attained.

Misoprostol produces a moderate decrease in pepsin concentration during basal conditions, but not during histamine stimulation. It has no significant effect on fasting or post-prandial gastric or intestinal acid secretion.

Effects on gastric acid secretion: Misoprostol, over the range of 50–200 mcg, inhibits basal and nocturnal gastric acid secretion, and acid secretion in response to a variety of stimuli, including meals, histamine, pentagastrin, and coffee. Activity is observed at 40 minutes after oral administration of misoprostol for at least 3 hours. In general, the effects of 50 mcg were modest and shorter lived, and only the 200-mcg dose had substantial effects on nocturnal secretion or on histamine- or meal-stimulated secretion.

Orally administered misoprostol is rapidly and extensively absorbed, and it undergoes rapid metabolism to its biologically active metabolite, misoprostol acid. Misoprostol acid in ARTHROTEC reaches a maximum plasma concentration in about 1 hour. The elimination half-life of misoprostol acid is about 1 hour. The elimination t_{1/2} of about 30 minutes. There is high variability in plasma levels of misoprostol acid between and within studies, but mean values after single doses show a linear relationship between dose and plasma levels. The range of 200 to 400 mcg. No accumulation of misoprostol acid was found in multiple-dose studies, and plasma steady state was achieved within 2 days. The serum protein binding of misoprostol acid is less than 90% and is concentration-independent in the therapeutic range.

After oral administration of radiolabeled misoprostol, about 70% of detected radioactivity appears in the urine. Maximum plasma concentrations of misoprostol acid are diminished when the dose is taken with food and total availability of misoprostol acid is reduced by use of concomitant antacid. Clinical trials were conducted with concomitant antacid; this effect does not appear to be clinically important.

Pharmacokinetic studies also showed a lack of drug interaction with antipyrine or propranolol given with misoprostol. Misoprostol given for 1 week had no effect on the steady state pharmacokinetics of diazepam when the two drugs were administered simultaneously.

Pharmacokinetics of ARTHROTEC
The pharmacokinetics following oral administration of a single dose (see Table 1) or multiple doses of ARTHROTEC (diclofenac sodium/misoprostol) to healthy subjects under fasted conditions are similar to the pharmacokinetics of the two individual components.

Table 1.
MISOPROSTOL AUC Mean (SD)

Treatment (n=36)	C _{max} (ng/mL)	t _{max} (hr)	AUC (0–4h) (ng·hr/mL)
ARTHROTEC 50	441 (137)	0.3 (0.13)	266 (95)
Cytotec®	478 (201)	0.2 (0.09)	295 (143)
ARTHROTEC 75	304 (110)	0.35 (0.09)	177 (49)
Cytotec	290 (130)	0.35 (0.12)	176 (58)

Table 2. (continued)
DICLOFENAC Mean (SD)

Treatment (n=36)	C _{max} (ng/mL)	t _{max} (hr)	AUC (0–12h) (ng·hr/mL)
ARTHROTEC 50	1207 (364)	2.4 (1.0)	1380 (272)
Volten®	1298 (441)	2.4 (1.0)	1357 (290)
ARTHROTEC 75	2037 (338)	2.0 (1.4)	2773 (314)
Volten	2326 (1318)	1.9 (0.7)	2699 (1185)

SD: Standard deviation of the mean
AUC: Area under the curve
C_{max}: Peak concentration
t_{max}: Time to peak concentration

The rate and extent of absorption of both diclofenac sodium and misoprostol acid from ARTHROTEC 50 and ARTHROTEC 75 are similar to those from diclofenac sodium and misoprostol formulations each administered alone.

Neither did the oral dose of misoprostol acid accumulated in plasma following repeated doses of ARTHROTEC given every 12 hours under fasted conditions. Food decreases the multiple-dose bioavailability profile of ARTHROTEC 50 and ARTHROTEC 75.

Special populations
A 4-week study, comparing plasma level profiles of diclofenac (50 mg bid) in younger (26–46 years) versus older (66–81 years) subjects, did not reveal any differences between age groups (10 patients per age group). In a multiple-dose (bid) crossover study of 24 people aged 65 years or older, the misoprostol portion of ARTHROTEC did not affect the pharmacokinetics of diclofenac.

Differences in the pharmacokinetics of diclofenac have not been detected in studies of patients with renal (50 mg intravenously) or hepatic impairment (100 mg oral solution). In patients with renal impairment (N=5, creatinine clearance < 42 mL/min), AUC values and elimination rates were comparable to those in healthy people. In patients with biopsy-confirmed cirrhosis or chronic active hepatitis (variably elevated transaminases and mildly elevated bilirubins, N=10), diclofenac concentrations and urinary elimination values were comparable to those in healthy people.

Pharmacokinetic studies with misoprostol in patients with varying degrees of renal impairment showed an approximate doubling of t_{1/2}, C_{max} and AUC compared to healthy people. In people over 64 years of age, the AUC for misoprostol acid is increased.

Misoprostol does not affect the hepatic mixed function oxidase (cytochrome P-450) enzyme system in animals. In patients with mild to moderate hepatic impairment, mean misoprostol acid AUC and C_{max} showed approximately double the mean values obtained in healthy people. Three people who had the lowest antipyrine and lowest indocyanine green clearance values had the highest misoprostol acid AUC and C_{max} values.

CLINICAL STUDIES

Osteoarthritis
Diclofenac sodium, as a single ingredient or in combination with misoprostol, has been shown to be effective in the management of the signs and symptoms of osteoarthritis.

Rheumatoid arthritis
Diclofenac sodium, as a single ingredient or in combination with misoprostol, has been shown to be effective in the management of the signs and symptoms of rheumatoid arthritis.

Upper gastrointestinal safety
Upper gastrointestinal safety, which has caused serious gastrointestinal toxicity, such as bleeding, ulceration and perforation of the stomach, small intestine or large intestine. Misoprostol has been shown to reduce the incidence of endoscopically diagnosed NSAID-induced gastric and duodenal ulcers. In a 12-week, randomized, double-blind, dose response study, misoprostol 200 mcg administered qid, tid or bid, was superior to placebo in reducing the incidence of gastric ulceration of gastric ulcer in OA and RA patients using a variety of NSAIDs. The tid regimen was therapeutically equivalent to misoprostol 200 mcg qid with respect to the prevention of gastric ulceration. Misoprostol 200 mcg was less effective than 200 mcg given tid or qid. The incidence of NSAID-induced duodenal ulcer was also significantly reduced with the three regimens of misoprostol compared to placebo (see Table 2).

Table 2.
Misoprostol 200 mcg Dose Regimen

	Placebo	bid	tid	qid
Gastric ulcer	11%	6%*	3%*	3%*
Duodenal ulcer	6%	2%*	3%*	1%*

N=1623; 12 weeks.
*Significantly different from placebo (p<0.05)

Results of a study in 572 patients with osteoarthritis demonstrate that patients receiving ARTHROTEC have a lower incidence of endoscopically defined gastric ulcers compared to patients receiving diclofenac sodium (see Table 3).

Table 3.
Incidence of ulcers

Osteoarthritis patients with history of ulcer or erosive disease (N=572), 6 weeks	Incidence of ulcers	
	Gastric	Duodenal
ARTHROTEC 50 tid	3%*	6%
ARTHROTEC 75 bid	4%*	3%
diclofenac sodium 75 mg bid placebo	11%	7%

*Statistically significantly different from diclofenac (p<0.05)

ARTHROTEC is indicated for treatment of the signs and symptoms of osteoarthritis or rheumatoid arthritis in patients at high risk of developing NSAID-induced gastric and duodenal ulcers and the complications. **WARNINGS—Gastric and Duodenal Ulcers:** NSAIDs are known to increase the risk of NSAID-induced gastric and duodenal ulcers and their complications.

See boxed **CONTRAINDICATIONS AND WARNINGS** related to misoprostol.

ARTHROTEC is contraindicated in patients with hypersensitivity to diclofenac or to misoprostol or other prostaglandins. ARTHROTEC should not be given to patients who have experienced asthma, urticaria, or other allergic-type reactions after taking aspirin or other NSAIDs. Severe, rarely fatal, anaphylactoid reactions to diclofenac sodium have been reported.

WARNINGS
Regarding misoprostol: See boxed **CONTRAINDICATIONS AND WARNINGS.**

Gastrointestinal (GI) effects—risk of GI ulceration, bleeding and perforation
Serious GI toxicity, such as inflammation, bleeding, ulceration and perforation of the stomach, small intestine or large intestine, can occur with any therapy, with or without symptoms, in patients treated with NSAIDs. Minor upper GI problems, such as dyspepsia, are common and may also occur with the use of NSAIDs. In patients receiving ARTHROTEC, physicians and patients should remain alert for ulceration and bleeding, even in the absence of previous GI tract symptoms.

In clinical trials, meaningful elevations (ie, more than 3 times the ULN) of AST (SGPT) ALT was not measured. In patients who occurred in about 2% of approximately 5,700 patients at some time during diclofenac treatment. In a large, open, controlled trial, meaningful elevations of ALT and AST occurred in about 4% of 3,700 patients treated for 6 months. In patients marked elevations (ie, more than 8 times the ULN) in about 1% of the 3,700 patients. In that open-label study, a higher incidence of borderline (less than 3 times the ULN), moderate (3–8 times the ULN) and mild (less than 3 times the ULN) elevations of ALT or AST was observed in patients receiving diclofenac when compared to other NSAIDs. Transaminase elevations were frequently observed in patients with osteoarthritis than in those with rheumatoid arthritis.

In addition to enzyme elevations seen in clinical trials, postmarketing surveillance has found rare cases of severe hepatic reactions, including liver necrosis, jaundice, and fulminant fatal hepatitis with and without jaundice. Some of these rare reported cases underwent liver transplantation.

Physicians should measure transaminases periodically in patients receiving long-term therapy with diclofenac. In severe hepatotoxicity may develop without a prodrome of distinguishing symptoms. The optimum times for making the test are postprandial and transaminase measurements are known. In the largest U.S. trial (open-label) that involved 3,700 patients monitored first at 8 weeks and 1,200 patients monitored again at 24 weeks, almost all meaningful elevations in transaminases were detected within 8 weeks of therapy. In symptomatic. In 42 of the 51 patients in all trials who developed marked transaminase elevations, abnormal tests occurred during the first 6 months of therapy with diclofenac. Postmarketing experience has shown severe hepatic reactions can occur at any time during treatment with diclofenac. Cases of drug-induced hepatotoxicity have been reported in the first 6 months and in 12 months of therapy with diclofenac. Based on these experiences, transaminases should be monitored within 4 to 8 weeks after initiating treatment with diclofenac (see PRECAUTIONS—Laboratory tests).

In clinical trials, the incidence of GI ulceration of ALT (SGPT, more than 3 times the ULN) occurred in 1.6% of 2,184 patients treated with ARTHROTEC and in 1.4% of 1,691 patients treated with diclofenac sodium. These increases were generally transient, and enzyme levels returned to within the normal range upon discontinuation of ARTHROTEC therapy. The misoprostol component of ARTHROTEC does not appear to exacerbate the hepatic effects caused by the diclofenac sodium component. As with other NSAID containing products, if abnormal liver tests persist or worsen, if clinical signs and/or symptoms consistent with liver disease develop, or if systemic manifestations occur (eg, eosinophilia, rash, etc.), ARTHROTEC should be discontinued immediately.

To minimize the possibility that hepatic injury will become severe between transaminase measurements, physicians should inform patients of the warning signs and symptoms of hepatotoxicity (eg, nausea, fatigue, lethargy, pruritus, jaundice, right upper quadrant tenderness, and "flu-like" symptoms), and the appropriate action patients should take if these signs and symptoms appear.

Anaphylactoid reactions
As with other NSAID containing products, anaphylactoid reactions may occur in patients receiving ARTHROTEC or its components. ARTHROTEC should not be given to patients with the aspirin trial. The trial typically occurs in asthmatic patients who experience rhinitis with or without nasal polyps, or who exhibit severe, potentially life-threatening bronchospasm after taking aspirin or other NSAIDs (see CONTRAINDICATIONS and PRECAUTIONS—Preexisting asthma). Emergency help should be sought in cases where an anaphylactoid reaction occurs.

Patients should be informed about the signs and/or symptoms that should be reported if they occur. The utility of pre-emptive laboratory monitoring has not been demonstrated, nor has it been adequately assessed. Only 1 in 5 patients who develop a serious allergic reaction to NSAIDs have a preceding history of symptoms. It has been demonstrated that upper GI ulcers, gross bleeding, or perforation, caused by NSAIDs, appear to occur in approximately 1% of patients treated for 6–8 months, and in 2–4% of patients treated for 1–5 months. Trends continue thus, increasing the likelihood of developing a serious GI event at some time during the course of therapy. However, even short-term therapy with risk.

NSAIDs should be prescribed with extreme caution in those with a prior history of ulcer disease or GI bleeding. Most spontaneous reports of fatal GI events are in elderly or debilitated patients. Therefore, great care should be taken in elderly patients using this population. To minimize the potential risk for an adverse event, the lowest effective dose should be used for the shortest possible duration. For very high-risk patients, alternative therapies that do not involve NSAIDs should be considered.

Studies have shown that patients with a history of peptic ulcer disease and/or GI bleeding, and who use NSAIDs, have a greater than 10-fold risk for developing GI bleeding. In patients with neither of these risk factors. In addition to a past history of ulcer disease, pharmacoeconomic studies indicate that the use of NSAIDs in patients with a past history may increase the risk for GI bleeding, such as: treatment with oral corticosteroids, treatment with anticoagulants, longer duration of NSAID therapy, older age, smoking, alcoholism, history of GI disease, and Helicobacter pylori positive status.

Hepatic effects
Elevations of one or more liver tests may occur during ARTHROTEC therapy. These laboratory abnormalities may progress, may remain relatively stable, or may be transient with or without therapy. Borderline elevations (ie, less than 3 times the ULN [ULN = the upper limit of the normal range]), or greater elevations of transaminases occurred in about 15% of diclofenac-treated patients. In patients receiving diclofenac sodium, the one recommended for the monitoring of liver injury.

In clinical trials, meaningful elevations (ie, more than 3 times the ULN) of ALT (SGPT) ALT was not measured. In patients who occurred in about 2% of approximately 5,700 patients at some time during diclofenac treatment. In a large, open, controlled trial, meaningful elevations of ALT and AST occurred in about 4% of 3,700 patients treated for 6 months. In patients marked elevations (ie, more than 8 times the ULN) in about 1% of the 3,700 patients. In that open-label study, a higher incidence of borderline (less than 3 times the ULN), moderate (3–8 times the ULN) and mild (less than 3 times the ULN) elevations of ALT or AST was observed in patients receiving diclofenac when compared to other NSAIDs. Transaminase elevations were frequently observed in patients with osteoarthritis than in those with rheumatoid arthritis.

In addition to enzyme elevations seen in clinical trials, postmarketing surveillance has found rare cases of severe hepatic reactions, including liver necrosis, jaundice, and fulminant fatal hepatitis with and without jaundice. Some of these rare reported cases underwent liver transplantation.

Physicians should measure transaminases periodically in patients receiving long-term therapy with diclofenac. In severe hepatotoxicity may develop without a prodrome of distinguishing symptoms. The optimum times for making the test are postprandial and transaminase measurements are known. In the largest U.S. trial (open-label) that involved 3,700 patients monitored first at 8 weeks and 1,200 patients monitored again at 24 weeks, almost all meaningful elevations in transaminases were detected within 8 weeks of therapy. In symptomatic. In 42 of the 51 patients in all trials who developed marked transaminase elevations, abnormal tests occurred during the first 6 months of therapy with diclofenac. Postmarketing experience has shown severe hepatic reactions can occur at any time during treatment with diclofenac. Cases of drug-induced hepatotoxicity have been reported in the first 6 months and in 12 months of therapy with diclofenac. Based on these experiences, transaminases should be monitored within 4 to 8 weeks after initiating treatment with diclofenac (see PRECAUTIONS—Laboratory tests).

In clinical trials, the incidence of GI ulceration of ALT (SGPT, more than 3 times the ULN) occurred in 1.6% of 2,184 patients treated with ARTHROTEC and in 1.4% of 1,691 patients treated with diclofenac sodium. These increases were generally transient, and enzyme levels returned to within the normal range upon discontinuation of ARTHROTEC therapy. The misoprostol component of ARTHROTEC does not appear to exacerbate the hepatic effects caused by the diclofenac sodium component. As with other NSAID containing products, if abnormal liver tests persist or worsen, if clinical signs and/or symptoms consistent with liver disease develop, or if systemic manifestations occur (eg, eosinophilia, rash, etc.), ARTHROTEC should be discontinued immediately.

To minimize the possibility that hepatic injury will become severe between transaminase measurements, physicians should inform patients of the warning signs and symptoms of hepatotoxicity (eg, nausea, fatigue, lethargy, pruritus, jaundice, right upper quadrant tenderness, and "flu-like" symptoms), and the appropriate action patients should take if these signs and symptoms appear.

Anaphylactoid reactions
As with other NSAID containing products, anaphylactoid reactions may occur in patients receiving ARTHROTEC or its components. ARTHROTEC should not be given to patients with the aspirin trial. The trial typically occurs in asthmatic patients who experience rhinitis with or without nasal polyps, or who exhibit severe, potentially life-threatening bronchospasm after taking aspirin or other NSAIDs (see CONTRAINDICATIONS and PRECAUTIONS—Preexisting asthma). Emergency help should be sought in cases where an anaphylactoid reaction occurs.

Patients should be informed about the signs and/or symptoms that should be reported if they occur. The utility of pre-emptive laboratory monitoring has not been demonstrated, nor has it been adequately assessed. Only 1 in 5 patients who develop a serious allergic reaction to NSAIDs have a preceding history of symptoms. It has been demonstrated that upper GI ulcers, gross bleeding, or perforation, caused by NSAIDs, appear to occur in approximately 1% of patients treated for 6–8 months, and in 2–4% of patients treated for 1–5 months. Trends continue thus, increasing the likelihood of developing a serious GI event at some time during the course of therapy. However, even short-term therapy with risk.

phylactoid reaction occurs. Allergic reactions have been reported in patients receiving ARTHROTEC in clinical trials, and there have been rare reports of anaphylaxis in the marketed use of ARTHROTEC outside of the United States.

Advanced renal disease
In patients with advanced kidney disease, treatment with ARTHROTEC is not recommended. If NSAID therapy must be initiated however, close monitoring of the patient's kidney function is advisable (see WARNINGS—Renal effects).

PRECAUTIONS

Information for patients

Patients should be advised of the following:
SPECIAL NOTE FOR WOMEN: ARTHROTEC contains misoprostol. Because of its abortifacient property, misoprostol may cause miscarriage. In pregnant women, misoprostol may cause miscarriage if given to pregnant women at any time during pregnancy. Miscarriages caused by misoprostol may be incomplete, which could lead to dangerous bleeding, hospitalization, surgery, infertility, or maternal or fetal death.

See **PATIENT INFORMATION** at the end of this labeling for important information to discuss with the patient.

ARTHROTEC is available only as a unit-of-use package that includes a leaflet containing important information. The patient should read the leaflet before taking ARTHROTEC and each time the prescription is renewed because the leaflet may have been updated. Keep ARTHROTEC out of the reach of children.

General
ARTHROTEC should be used to substitute for corticosteroids or to treat for corticosteroid insufficiency. Abrupt discontinuation of corticosteroids may lead to disease exacerbation. Patients on prolonged corticosteroid therapy should taper their therapy tapered slowly if a decision is made to discontinue corticosteroids.

The pharmacological activity of ARTHROTEC in reducing inflammation may diminish the utility of this diagnostic sign in detecting complications of presumed noninfectious, painful conditions.

Renal effects

Caution should be used when initiating treatment with ARTHROTEC in patients with considerable dehydration. It is advisable to rehydrate patients first and then start therapy with ARTHROTEC. Prolonged corticosteroid therapy may cause preexisting kidney disease (see WARNINGS—Advanced renal disease). As with other NSAIDs, long-term administration of diclofenac has resulted in renal papillary necrosis and other renal medullary changes. Renal toxicity has also been seen in patients in which renal prostaglandin function is a compensatory mechanism in the presence of renal insufficiency. In these patients, administration of an NSAID may cause a dose-dependent reduction in prostaglandin formation and, secondarily, in renal blood flow, which may precipitate overt renal decompensation. Patients at greatest risk of this complication are those with impaired renal function, heart failure, or liver dysfunction, those taking diuretics and ACE inhibitors, and the elderly. Discontinuation of NSAID therapy is usually followed by recovery of renal function.

Diclofenac metabolites are eliminated primarily by the kidneys. The extent to which the metabolites may accumulate in renal impairment has not been determined. As with other NSAIDs, metabolites of which are excreted in the kidney, patients with significantly impaired renal function should be more closely monitored.

Hematologic effects

Anemia is sometimes seen in patients receiving diclofenac or other NSAIDs. This may be due to fluid retention, GI blood loss, or an incompletely described effect upon erythropoiesis. Patients on long-term treatment with NSAIDs, including ARTHROTEC, should have their hemoglobin checked if they exhibit any signs or symptoms of anemia.

All drugs that inhibit the biosynthesis of prostaglandins may interact to some extent with platelet function and vascular responses to bleeding.

NSAIDs inhibit platelet aggregation and, unlike aspirin, their effect on platelet function is reversible, quantitatively less, and of shorter duration. Therefore, patients who are on affect platelet factors, prothrombin time (PT), or partial thromboplastin time (PTT). Patients receiving ARTHROTEC who may be adversely affected by these effects should be advised, as those with coagulation disorders or patients receiving anticoagulants, should be carefully monitored.

Asseptic meningitis

As with other NSAIDs, aseptic meningitis with fever and coma has been observed in patients receiving diclofenac or diclofenac therapy. Although it is probably more likely to occur in patients with systemic lupus and related connective tissue diseases, it has been reported in patients who do not have systemic lupus. The clinical picture of aseptic meningitis developed in a patient on diclofenac, the possibility of its being related to diclofenac should be considered.

Fluid retention and edema

Fluid retention and edema have been observed in some patients taking NSAID containing products, including ARTHROTEC. Therefore, as with other NSAID containing products, ARTHROTEC should be used with caution in patients with a history of cardiac decompensation, hypertension, or other conditions predisposing to fluid retention.

Preexisting asthma
Patients with asthma may have aspirin-sensitive asthma. The use of aspirin in these patients can potentially lead to a severe asthma associated with severe bronchospasm, which can be fatal. Since cross-reactivity, including bronchospasm, between aspirin and other NSAIDs has been reported in such aspirin-

A05440-